REMARKS/ARGUMENTS

Brief Summary of Status

Claims 1-52 and 55-63 are pending in the application.

Claims 1-52 and 55-63 are rejected.

Claim rejections - 35 U.S.C. § 103

In the above-referenced office action, the Examiner asserts the following:

"2. Claims 1, 2, 4-10, 14-16, 18-23, 27-30, 33-36, 38-44, 48-50, 52, 55-58, 62 and 63 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 7,203,459 to Goldstein et al in view of U.S. Patent No. 7,474,686 to Ho." (office action, Part of Paper No./Mail Date 20090610, p. 2)

The Applicant respectfully traverses.

The Applicant respectfully points out that Goldstein monitors only one singular operational parameter therein, namely, SNR, in accordance with the "mode adaptation" functionality therein.

The fact that more than one SNR value may be measured in Goldstein (e.g., "set of SNRs as determined by equation (7) contains all the necessary and sufficient information for mode adaptation. Thus, the SNRs are sent to the MAC layer (FIG. 10) for final mode assignment)" (see Goldstein, col. 6, line 66 to col. 7, line 3)) corresponds to the context of "multicarrier systems" in which the "method provides a full set of carrier SNRs" (see Goldstein, col. 7, line 55-56) such that each SNR measurement corresponds to one respective carrier in such "multicarrier systems". Nonetheless, there is still only one operational parameter that is being measured, SNR, even in the "multicarrier" context of Goldstein.

The Applicant also respectfully points out that it appears that the Examiner equates different values of a singular operational parameter as being the same as "a plurality of operational parameters". In other words, it appears that the Examiner equates different values that a singular operational parameter may take at different times with "a plurality of operational parameters". For example, in multiple locations of the office action, the Examiner equivalences "a set of SNRs" with Applicant's claimed a plurality

of operational parameters. A "set of SNRs" in goldstein constitutes multiple measurements of a singular operational parameter, namely, SNR.

For example, at a first time, the operational parameter of SNR may have a first value; then at a second time, that very same operational parameter of SNR may have a second value; and then at a third time, that very same operational parameter of SNR may have a third value; and so on.

In other words, the value of an operational parameter may vary as a function of time, but the operational parameter itself is the same (even though the respective value of that operational parameter may change, as is the nature in a dynamic type system). In the example provided here, the operational parameter is always SNR at each of the time 1, time 2, and time 3, but the value of the SNR may be different at time 1, time 2, and time 3.

In addition, the Applicant claims subject matter in which a first plurality of operational parameter that is a first subset of the plurality of operational parameters may be monitored and then that a second plurality of operational parameter that is a second subset of the plurality of operational parameters. These are two separate subsets of the plurality of operational parameters.

As claimed in various dependent claims, in some embodiments, the first plurality of operational parameters and the second plurality of operational parameters include at least one common operational parameter. As such, in other embodiments in accordance with the doctrine of claim differentiation, the first plurality of operational parameters and the second plurality of operational parameters may include no common operational parameters (e.g., each may include entirely different operational parameters).

Here again, the Applicant respectfully points out the distinction between a first value and a second value that a singular operational parameter may take (e.g., the SNR may have an SNR measurement 1 at time 1, an SNR measurement 2 at time 2, etc.) and two actually different operational parameters themselves such as a first operational parameter "code rate" compared to a second operational parameter "modulation" compared to a third operational parameter "data rate" (e.g., see dependent claim 14 showing different examples of types of operational parameters).

For example, dependent claim 14 (as one example) recites different types of operational parameters (e.g., a distance between the device and the at least one additional device; a location of the device; a location of the at least one additional device; interference of a signal transmitted across the PHY link; a data rate employed for a signal transmitted across the PHY link; a QoS (Quality of Service) of the PHY link; a SNR (Signal to Noise Ratio) of a signal transmitted across the PHY link; a PN (Pseudo-Noise) code assigned to spread UWB (Ultra Wide Band) pulses of a signal transmitted across the PHY link; a power level of a signal transmitted across the PHY link; a code rate of a signal transmitted across the PHY link; a modulation that modulates a signal transmitted across the PHY link; and a TFC (time frequency code) that modulates OFDM (Orthogonal Frequency Division Multiplexing) symbols of a signal transmitted across the PHY link).

Any one of these operational parameters may have different values at different times, but that one of the operational parameters is still the same operational parameter at each of those different times.

For example, the operational parameter "code rate" may be 1/n at time 1, 1/m at time 2, 1/o at time 3, and so on (e.g., as may be the case in a dynamic/adjustable system), but the operational parameter itself is nonetheless "code rate" at each of time 1, at time 2, at time 3, and so on.

For another example, the operational parameter "modulation" may be BPSK at time 1, QPSK at time 2, 16 QAM at time 3, and so on (e.g., as may be the case in a dynamic/adjustable system), but the operational parameter itself is nonetheless "modulation" at each of time 1, at time 2, at time 3, and so on.

For yet another example, the operational parameter "data rate" may be X Mps at time 1, Y Mps at time 2, Z Mps at time 3, and so on (e.g., as may be the case in a dynamic/adjustable system), but the operational parameter itself is nonetheless "data rate" at each of time 1, at time 2, at time 3, and so on.

As can be seen, in a dynamic type of system, an operational parameter may consequently take on different values at different times, but that operational parameter is the same operational parameter at each of those different times (e.g., the operational parameter "code rate" is still "code rate" at each of times 1, 2, 3, etc. – alternatively,

the operational parameter "modulation" is still "modulation" at each of times 1, 2, 3, etc. – even alternatively, the operational parameter "data rate" is still "data rate" at each of times 1, 2, 3, etc.).

In Goldstein, there is only one operational parameter that is monitored (and that being SNR), and the corresponding mode may possibly be modified in response thereto (e.g., each mode including a respective data rate, modulation type, and coding rate as shown by TABLE I in col. 1 of Goldstein).

As Goldstein teaches and discloses:

"In accord with the above objects, the present invention provides methods, apparatus, and systems for mode assignment and mode adaptation to channel conditions which are based on estimations of real signal-to-noise ratios (SNR) for each frequency carrier bearing information. The invention utilizes two principal procedures: signal-to-noise ratio (SNR) estimation, and a corresponding mode assignment." (see Goldstein, col. 2, line 59-65, emphasis added)

Goldstein employs these "two principal procedures: signal-to-noise ratio (SNR) estimation, and a corresponding mode assignment" in accordance with the functionality therein.

Since Goldstein only monitors one operational parameter, SNR, in accordance with the teaching and disclosure thereof, there is no indication that more than one type of operational parameter is being monitored by the physical layer (PHY) in Goldstein, or that a first subset of a plurality of possible operational parameters is monitored at a first time, or that a second subset of a plurality of possible operational parameters is monitored at a second time.

Considering FIG. 10 of Goldstein, the PHY 101 of transceiver 100b includes blocks 32b, 34b, and 36b to perform "SNR estimation". As may be seen by FIG. 10 of Goldstein, the "set of SNRs is fed to the MAC where channel quality function is calculated by block 54b" (see Goldstein, col. 12, lines 33-35, emphasis added).

Also, it can be seen in FIG. 10 of Goldstein that the blocks 32b, 34b, and 36b of the PHY of the transceiver 100b perform "SNR estimation" without any direction provided whatsoever from the MAC layer of the transceiver 100b.

Note that the "set of SNRs is fed to the MAC", and there is no indication that the MAC layer of the transceiver 100b directs the operation of the blocks 32b, 34b, and 36b of the PHY of the transceiver 100b to perform "SNR estimation".

As can be seen in FIG. 10 of Goldstein, the feedback/control/direction from the MAC layer of the transceiver 100b is provided to the transmitter 2 10b of the transceiver 100b, and the feedback/control/direction from the MAC layer of the transceiver 100b is not provided to the blocks 32b, 34b, and 36b of the PHY of the transceiver 100b that perform "SNR estimation".

As Goldstein teaches and discloses:

"The set of SNRs is fed to the MAC where channel quality function is calculated by block 54b. The optimal mode is then determined by block 56b according to equation (9) and using any of the above-described techniques (average carrier SNR, minimum carrier SNR, or SNR-with-predetermined-index), or any other desirable technique. Finally, the MAC informs the physical layer (i.e., the determination of the mode assignment block 56b is fed back to the transmitter 10b) about the assigned mode in the direction from transceiver 100a to transceiver 100b." (see Goldstein, col. 12, line 33-43, emphasis added)

As can be seen, the feedback/control/direction from the MAC layer of the transceiver 100b is provided in contradistinction to the transmitter 2 10b of the transceiver. As can be seen in FIG. 10 of Goldstein, the blocks 32b, 34b, and 36b of the PHY of the transceiver 100b perform "SNR estimation" without any feedback/control/direction as provided from the MAC layer.

As can be seen by the arrows showing the flow of information/control in FIG. 10 of Goldstein, the blocks 32b, 34b, and 36b of the PHY of the transceiver 100b perform "SNR estimation" without any feedback/control/direction as provided from the MAC layer. The only feedback/control/direction from the MAC layer of the transceiver 100b is provided to the transmitter 2 10b of the transceiver (i.e., it is not provided to the blocks 32b, 34b, and 36b of the PHY of the transceiver 100b).

The Applicant's independent claims 1, 16, 29, 35, and 50 each respectively include subject matter, among other respective subject matter limitations, directed to the operation of the PHY as being directed by the MAC and also that various subsets of

operational parameter may be assessed by the PHY (e.g., first subset, second subset) under the MAC's direction.

Goldstein monitors only one singular operational parameter, SNR, in accordance with the "mode adaptation" functionality therein. In a dynamic system, the Applicant respectfully points out that while the value of the SNR of any one carrier may certainly change over time as it does in Goldstein (e.g., SNR value 1 at time 1, SNR value 2 at time 2, SNR value 3 at time 3, etc.), there is still nonetheless only the singular operational parameter of SNR that is being monitored.

In Goldstein, there is no indication that any other or any additional operational parameters are being monitored by the PHY of the transceiver 100b, and as such, there also is no indication that a first subset of operational parameters may be monitored by the PHY of the transceiver 100b in Goldstein and that a second subset of operational parameters (different than the subset of operational parameters) may be monitored by the PHY of the transceiver 100b in Goldstein.

Also in Goldstein, there is no indication that the operation of the blocks 32b, 34b, and 36b of the PHY of the transceiver 100b perform their respective task of "SNR estimation" based on any feedback/control/direction whatsoever (and as such not based on any feedback/control/direction as provided from the MAC layer).

The Applicant also respectfully asserts that the inclusion of Ho fails to overcome the deficiencies of Goldstein.

The Applicant respectfully asserts that Goldstein and Ho, when considered individually or together, fails to teach and disclose the subject matter as claimed by the Applicant in these claims.

In view of at least these comments made above, the Applicant respectfully believes that these independent claims rejected above are patentable over Goldstein and Ho.

The Applicant respectfully believes that these dependent claims rejected above, being further limitations of the subject matter as claimed in allowable independent claims, respectively, are also allowable.

As such, the Applicant respectfully requests that the Examiner withdraw the rejections of these claims.

In the above-referenced office action, the Examiner asserts the following:

"3. Claims 3, 17, 31, 37 and 51 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 7,203,459 to Goldstein et al in view of U.S. Patent No. 7,474,686 to Ho, and in further view of U.S. Patent No. 6,999,432 to Zhang et al." (office action, Part of Paper No./Mail Date 20090610, p. 11)

The Applicant respectfully traverses.

The comments made above with respect to Goldstein and Ho are also applicable here.

The Applicant respectfully believes that the inclusion of Zhang fails to overcome the deficiencies of Goldstein and Ho.

The Applicant respectfully believes that the Applicant's independent claims are allowable over Goldstein and Ho.

The Applicant respectfully asserts that Goldstein, Ho, and Zhang, when considered individually or together, fails to teach and disclose the subject matter as claimed by the Applicant in these claims.

The Applicant respectfully believes that these dependent claims rejected above, being further limitations of the subject matter as claimed in allowable independent claims, respectively, are also allowable.

As such, the Applicant respectfully requests that the Examiner withdraw the rejections of these claims.

In the above-referenced office action, the Examiner asserts the following:

"4. Claims 11, 24, 45, and 59 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 7,203,459 to Goldstein et al in view of U.S. Patent No. 7,474,686 to Ho, and in further view of U.S. Patent No. 7,391,714 to Blasco Claret et al." (office action, Part of Paper No./Mail Date 20090610, p. 12)

The Applicant respectfully traverses.

The comments made above with respect to Goldstein and Ho are also applicable here.

The Applicant respectfully believes that the inclusion of Blasco Claret fails to overcome the deficiencies of Goldstein and Ho.

The Applicant respectfully believes that the Applicant's independent claims are allowable over Goldstein and Ho.

The Applicant respectfully asserts that Goldstein, Ho, and Blasco Claret, when considered individually or together, fails to teach and disclose the subject matter as claimed by the Applicant in these claims.

The Applicant respectfully believes that these dependent claims rejected above, being further limitations of the subject matter as claimed in allowable independent claims, respectively, are also allowable.

As such, the Applicant respectfully requests that the Examiner withdraw the rejections of these claims.

In the above-referenced office action, the Examiner asserts the following:

"5. Claims 12, 25, 46 and 60 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 7,203,459 to Goldstein et al in view of U.S. Patent No. 7,474,686 to Ho, and in further view of U.S. Patent No. 7,330,433 to Shao et al." (office action, Part of Paper No./Mail Date 20090610, p. 13)

The Applicant respectfully traverses.

The comments made above with respect to Goldstein and Ho are also applicable here.

The Applicant respectfully believes that the inclusion of Shao fails to overcome the deficiencies of Goldstein and Ho.

The Applicant respectfully believes that the Applicant's independent claims are allowable over Goldstein and Ho.

The Applicant respectfully asserts that Goldstein, Hom and Shao, when considered individually or together, fails to teach and disclose the subject matter as claimed by the Applicant in these claims.

The Applicant respectfully believes that these dependent claims rejected above, being further limitations of the subject matter as claimed in allowable independent claims, respectively, are also allowable.

As such, the Applicant respectfully requests that the Examiner withdraw the rejections of these claims.

In the above-referenced office action, the Examiner asserts the following:

"6. Claims 13, 26, 32, 47 and 61 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 7,203,459 to Goldstein et al in view of U.S. Patent No. 7,474,686 to Ho, and in further view of U.S. Patent No. 5,561,666 to Christensen et al." (office action, Part of Paper No./Mail Date 20090610, p. 15)

The Applicant respectfully traverses.

The comments made above with respect to Goldstein and Ho are also applicable here.

The Applicant respectfully believes that the inclusion of Christensen fails to overcome the deficiencies of Goldstein and Ho.

The Applicant respectfully believes that the Applicant's independent claims are allowable over Goldstein and Ho.

The Applicant respectfully asserts that Goldstein, Ho, and Christensen, when considered individually or together, fails to teach and disclose the subject matter as claimed by the Applicant in these claims.

The Applicant respectfully believes that these dependent claims rejected above, being further limitations of the subject matter as claimed in allowable independent claims, respectively, are also allowable.

As such, the Applicant respectfully requests that the Examiner withdraw the rejections of these claims.

The Applicant respectfully believes that the pending claims are in condition for allowance and respectfully requests that they be passed to allowance.

The Examiner is invited to contact the undersigned by telephone or facsimile if the Examiner believes that such a communication would advance the prosecution of the present U.S. utility patent application.

RESPECTFULLY SUBMITTED,

By: /SXShort/ Reg. No. 45,105

Shayne X. Short, Ph.D., Reg. No. 45,105
Direct Phone: (512) 825-1145
Direct Fax No. (888) 456-7824

GARLICK HARRISON & MARKISON
ATTORNEYS AT LAW
P.O. BOX 160727
AUSTIN, TEXAS 78716-0727
TELEPHONE (512) 825-1145 / FACSIMILE (888) 456-7824 or (888) 711-8305